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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,063	02/11/2004	Takashi Sato	Q79869	3316

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EXAMINER	
MILLER, MICHAEL G	
ART UNIT	PAPER NUMBER
1792	
MAIL DATE	DELIVERY MODE
11/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,063	SATO ET AL.	
	Examiner	Art Unit	
	Michael G. Miller MGM	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment and Arguments

1) Examiner notes the amendment to Claim 1 in the Applicant's reply dated 4 September 2007.

2) Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment to Claim 1. These arguments are that the claims as amended to exclude hydrogen gas from the mixed feed gas overcome the prior art rejections made in the previous action.

Claim Rejections - 35 USC § 103

3) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4) The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

(1) Determining the scope and contents of the prior art.
(2) Ascertaining the differences between the prior art and the claims at issue.
(3) Resolving the level of ordinary skill in the pertinent art.
(4) Considering objective evidence present in the application indicating obviousness or nonobviousness.

5) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6) Claims 1-2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (U.S. PGPub 2002/0064606, hereinafter '606) in view of Veerasamy et al (U.S. Patent 5,858,477, hereinafter '477).

7) With specific regard to Claim 1, '606 teaches a method of producing a magnetic disk, comprising:

   a) Forming at least a magnetic layer (32) on a disk substrate (S) (Figure 2).

   b) Thereafter forming a carbon-based protection layer (33) by plasma CVD (paragraphs 0218 - 0220, Figure 1)

      i) Performed using a mixed gas of a hydrocarbon-based gas and a nitrogen gas without containing an inactive gas (paragraphs 0237 - 0239).

      ii) Performed under the condition that the disk substrate with the magnetic layer formed thereon is kept at 250°C (paragraphs 0166 -0168).

   c) '606 does not exclude hydrogen gas from the mixed gases.

d) '477 teaches the use of an acetylene - nitrogen system to deposit diamond-like carbon layers using P-CVD over magnetic recording media films (Column 18 Lines 12 - 53 for the acetylene - nitrogen system, Column 11 Lines 20-32 for the teaching that nitrogen may be continuously fed with the acetylene to nitrogenate the resultant diamond-like carbon film).

e) Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have combined the method of '606 with the technique of '477 because '606 wants to deposit a diamond-like carbon layer on a magnetic recording media using P-CVD and '477 teaches a feed gas system for doing so.

8) With specific regard to Claim 2, which contains all the limitations of Claim 1 as listed above, '606/'477 teaches the method of Claim 1 wherein:

a) The mixed gas is a mixture of a low-molecular weight straight-chain hydrocarbon-based gas ('606 paragraph 0094 for definition of low-molecular-weight, paragraph 0237 for description of mixture, paragraph 0238 for listing of allowable hydrocarbons which include Applicant's selection) and a nitrogen gas ('606 paragraph 0237).

9) With specific regard to Claim 5, which contains all the limitations of Claim 1 as listed above, '606/'477 teaches the method of Claim 1 wherein:

a) a. The magnetic disk is for use in a magnetic disk apparatus of a load/unload system. Examiner takes the position that:

i) The method of '606/'477 anticipates the method of Applicant.

ii) The product resulting from the method of '606/'477 fulfills the limitation of Claim 5 because it is capable of being used in a load/unload system.

10) Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over '606/'477 in view of Suzuki et al (U.S. Patent 6,680,112, hereinafter '112).

11) With specific regard to Claim 3, which contains all the limitations of Claim 1, '606/'477 teaches the method of Claim 1 in its entirety.

a) '606/'477 also teaches a lubricating film wherein the upper surface of said film reduces surface friction ('606 Paragraphs 0513-0517).

b) '606/'477 does not teach the limitation of Claim 3, which specifies that the method of Claim 1 further comprises exposing the carbon-based protective layer to nitrogen plasma after forming the carbon-based protection layer.

c) '112 teaches that using an etching gas, wherein nitrogen is explicitly cited as a valid example among other gases that can generate a plasma (Column 5 Lines 16-29), allows for controlling the affinity of the DLC film to a lubricant film (Column 4 Lines 21-45, 50-56), promoting adhesion of the lubricant film to the DLC film.

d) Examiner takes the position that the invention of Claim 3 is suitable for use in a CSS system. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. Sinclair & Carroll Co. v. Interchemical Corp., U.S. 327, 65 USPQ 297 (1945).

e) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the plasma-etching step of '112 to

the selected method of '606 because '606 teaches a lubricating film, '112 teaches a method to improve the affinity between the lubricating film and the DLC film, and the selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness.

12) With specific regard to Claim 4, which contains all the limitations of Claim 3 as listed above, '606/'477/'112 teach all the limitations of Claims 1 and 3.

a) '606/'477/'112 further teaches forming a lubrication layer after exposing the carbon-based protection layer to nitrogen plasma ('606 paragraph 0247).

Conclusion

13) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsuo et al (U.S. Patent 5,837,357) and Sasaki et al (U.S. Patent 6,455,101) are both documents detailing information relevant to the manufacture of carbon protective layers and/or magnetic recording media.

14) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15) A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Miller whose telephone number is (571) 270-1861. The examiner can normally be reached on M-F 7-4.

17) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MGM MGM

MICHAEL CLEVELAND
SUPERVISORY PATENT EXAMINER